## EQUIVOCAL ENFORCEMENT: REGULATORY DISPUTES IN OSHA

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Abstract. Research on the effectiveness of government regulatory enforcement has for the most part neglected the possibility of firms disputing agency charges. However, the Administrative Procedure Act (APA) of 1946 requires U.S. federal agencies to have an internal appeals system, which provides an initial forum for such disputes. Moreover, regulatory disputes are not unusual: 67 percent of citation items issued by Occupational Safety and Health Administration (OSHA) in 1990-2000 were disputed. This paper addresses following questions – Which circumstances in the enforcement-compliance scenario result in a dispute? What determines firms' success in negotiating the "punishment"?

Theoretical analysis of regulatory disputes is carried out using a sequential bargaining game between the regulator and the firm. The players are uncertain about true compliance status and update their estimates with information that arrives gradually over the course of negotiations. The analysis indicates that the firm is more likely to negotiate if the variance of the regulator's estimate is high, the rates of new information arrival are high, and this information is not too "noisy". The firms that go further along in the appeals process get more substantial reductions in "punishment" due to selectivity bias.

Empirical analysis of regulatory disputes is performed using OSHA violations at pulp and paper, oil, and steel industry establishments in 1990-2000. Results suggest that citations produced by more thorough inspections are less likely to be disputed. Larger and more profitable firms have an advantage in negotiating with OSHA due to economies of scale in legal expenditures. Success of an appeal is primarily determined by the initial properties of the citation – more serious proposed "punishment" results in more substantial reductions of the same.

JEL Classification: Economics of Regulation (L5), Law and Economics (K2, K4), Game Theory and Bargaining Theory (C7), Econometric Modeling (C5).

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